The Progressive Fish-Culturist 49:318–320, 1987

INDEX TO VOLUME 49

This index is subdivided into Author and Subject categories. Within each, numbers are the first pages of respective articles.

Author Index

A

Allen, K. O. 290
Anderson, R. J. 198
Arnold, C. R. 1
Ayers, K. T. 133

B

Barbera, P. A. 229
Barkoh, A. 204
Baxter, D. S. 284
Beleau, M. H. 108
Bentinck-Smith, J. 108
Bowser, P. R. 108, 188
Boyd, C. E. 100, 260, 306
Braid, M. R. 236
Brandt, T. M. 13, 73, 198, 286
Brannon, E. L. 167
Browman, H. I. 140
Brown, L. A. 108
Brunson, M. W. 296
Bryant, M. D. 167
Bulak, J. S. 230
Bulkowski-Cummings, L. 217
Bullock, G. L. 302
Buttner, J. K. 136

C

Cameron, J. D. 124
Carter, R. R. 290
Chitwood, R. 177
Collopy, M. W. 44
Colura, R. L. 60, 253
Crane, J. S. 230
Cross, V. K. 233

D

Daniels, H. V. 260, 306
de la Noüe, J. 34
Dunham, R. A. 293
Dwyer, W. P. 57, 175

E

Edelhauser, H. F. 219
Edsall, D. A. 93, 299
Ellis, R. W. 303
Erdahl, D. 276

F

Falls, W. W. 188
Farquhar, B. W. 21
Field-Dodgson, M. S. 75
Fitzpatrick, M. S. 177
Flickinger, S. A. 286
Flores, A. 239

G

Gates, D. W. 230
Goodman, R. K. 293
Gould, R. W. 96
Gray, R. W. 124
Greenland, D. C. 72
Groff, J. M. 181
Guillou, A. 34

H

Hamman, R. L. 138
Hardy, R. W. 192
Harrell, L. W. 96
Hawke, S. P. 75
Hedrick, R. P. 181
Heinen, J. M. 119
Henderson-Arzapalo, A. 60
Hestand, R. S. 213
Hokanson, K. E. F. 63, 160
Huguenin, J. E. 133

J

Jafri, S. I. H. 237
Jones, R. M., Jr. 198
Jordan, C. T. 152

K

Kindschi, G. A. 299, 314
Koenst, W. M. 63
Krise, W. F. 284

L

LaBomascus, D. C. 64
Leitner, L. 303
Lewis, W. M. 270
Lien, G. J. 160
Linton, T. L. 64
Lloyd, S. W. 131
Long, J. 303

M

Maciorowski, A. F. 253
Maestrone, G. 188
Mahnken, C. V. W. 96
Marcotte, B. M. 140
Marking, L. L. 208
Martinez-Palacios, C. A. 239
Matlock, G. C. 253
Mazik, P. M. 13
McClain, J. 276
McDowell, T. 181
McGinty, A. S. 17, 129
McIntyre, D. B. 264
Meade, J. W. 217, 280
Millard, J. L. 117
Minton, R. V. 260
Modde, T. 204
Moffitt, C. M. 241
Moore, A. A. 40
Morrow, J. C. 73
Moy, P. B. 76
Murad, A. 100

N

Nead, M. 136

O

Okrah, E. A. 44
Olvera, M. A. 239
Orsi, J. A. 144
Ostergaard, D. E. 115

P

Palko, B. J. 310
Paller, M. H. 270
Parker, N. C. 161
Parsons, J. 303
Peterson, L. 233
Phillips, R. A. 299
Piper, R. G. 57
Prentice, J. A. 66

R

Ratti, F. 177
Reinitz, G. 81
Richards, F. M. 146
Rieniets, J. P. 117
Robertson, L. 1
Robinette, H. R. 296
Robinson, E. H. 64
Rottiers, D. V. 238

S

Schramm, H. L., Jr. 44
Schreck, C. B. 177
Schreck, J. A. 241
Severson, S. H. 299
Shearer, K. D. 192
Short, J. W. 144
Smith, R. R. 248
Smith, S. D. 96
Smitherman, R. O. 293
Soderberg, R. W. 280, 284

The Progressive Fish-Culturist 49:318–320, 1987

INDEX TO VOLUME 49

This index is subdivided into Author and Subject categories. Within each, numbers are the first pages of respective articles.

Author Index

A

Allen, K. O. 290
Anderson, R. J. 198
Arnold, C. R. 1
Ayers, K. T. 133

B

Barbera, P. A. 229
Barkoh, A. 204
Baxter, D. S. 284
Beleau, M. H. 108
Bentinck-Smith, J. 108
Bowser, P. R. 108, 188
Boyd, C. E. 100, 260, 306
Braid, M. R. 236
Brandt, T. M. 13, 73, 198, 286
Brannon, E. L. 167
Browman, H. I. 140
Brown, L. A. 108
Brunson, M. W. 296
Bryant, M. D. 167
Bulak, J. S. 230
Bulkowski-Cummings, L. 217
Bullock, G. L. 302
Buttner, J. K. 136

C

Cameron, J. D. 124
Carter, R. R. 290
Chitwood, R. 177
Collopy, M. W. 44
Colura, R. L. 60, 253
Crane, J. S. 230
Cross, V. K. 233

D

Daniels, H. V. 260, 306
de la Noüe, J. 34
Dunham, R. A. 293
Dwyer, W. P. 57, 175

E

Edelhauser, H. F. 219
Edsall, D. A. 93, 299
Ellis, R. W. 303
Erdahl, D. 276

F

Falls, W. W. 188
Farquhar, B. W. 21
Field-Dodgson, M. S. 75
Fitzpatrick, M. S. 177
Flickinger, S. A. 286
Flores, A. 239

G

Gates, D. W. 230
Goodman, R. K. 293
Gould, R. W. 96
Gray, R. W. 124
Greenland, D. C. 72
Groff, J. M. 181
Guillou, A. 34

H

Hamman, R. L. 138
Hardy, R. W. 192
Harrell, L. W. 96
Hawke, S. P. 75
Hedrick, R. P. 181
Heinen, J. M. 119
Henderson-Arzapalo, A. 60
Hestand, R. S. 213
Hokanson, K. E. F. 63, 160
Huguenin, J. E. 133

J

Jafri, S. I. H. 237
Jones, R. M., Jr. 198
Jordan, C. T. 152

K

Kindschi, G. A. 299, 314
Koenst, W. M. 63
Krise, W. F. 284

L

LaBomascus, D. C. 64
Leitner, L. 303
Lewis, W. M. 270
Lien, G. J. 160
Linton, T. L. 64
Lloyd, S. W. 131
Long, J. 303

M

Maciorowski, A. F. 253
Maestrone, G. 188
Mahnken, C. V. W. 96
Marcotte, B. M. 140
Marking, L. L. 208
Martinez-Palacios, C. A. 239
Matlock, G. C. 253
Mazik, P. M. 13
McClain, J. 276
McDowell, T. 181
McGinty, A. S. 17, 129
McIntyre, D. B. 264
Meade, J. W. 217, 280
Millard, J. L. 117
Minton, R. V. 260
Modde, T. 204
Moffitt, C. M. 241
Moore, A. A. 40
Morrow, J. C. 73
Moy, P. B. 76
Murad, A. 100

N

Nead, M. 136

O

Okrah, E. A. 44
Olvera, M. A. 239
Orsi, J. A. 144
Ostergaard, D. E. 115

P

Palko, B. J. 310
Paller, M. H. 270
Parker, N. C. 161
Parsons, J. 303
Peterson, L. 233
Phillips, R. A. 299
Piper, R. G. 57
Prentice, J. A. 66

R

Ratti, F. 177
Reinitz, G. 81
Richards, F. M. 146
Rieniets, J. P. 117
Robertson, L. 1
Robinette, H. R. 296
Robinson, E. H. 64
Rottiers, D. V. 238

S

Schramm, H. L., Jr. 44
Schreck, C. B. 177
Schreck, J. A. 241
Severson, S. H. 299
Shearer, K. D. 192
Short, J. W. 144
Smith, R. R. 248
Smith, S. D. 96
Smitherman, R. O. 293
Soderberg, R. W. 280, 284

Sonski, A. J. 152
Steeby, J. A. 308
Stein, R. A. 312
Stickney, R. R. 76
Stiles, F. 108
Stuckey, H. M. 302
Swanson, G. M. 264
Szedlmayer, S. T. 158

T

Tackett, D. L. 290
Tang, J. 167
Thomas, P. 1, 66
Thompson, B. Z. 213
Tomasso, J. R. 13
Trant, J. M. 1
Trent, L. 310
Trimble, A. 310
Tucker, C. S. 108
Tucker, J. W., Jr. 49, 224, 229

U

Ubels, J. L. 219
Underwood, J. L. 213

V

Verdegem, M. C. 129

W

Wahl, D. H. 312
Walsh, M. 133
Ward, F. J. 264
Ward, S. H. 29
Waterstrat, P. 108
Watson, L. C. 69
Wattendorf, R. J. 213
Westers, H. 87
Williamson, J. H. 156
Winkler, P. 154

Y

Yuschak, P. 146

Z

Zaugg, W. S. 96

Subject Index

Keywords

Crustaceans and Molluscs: General
Drugs and Chemicals: Efficacy; Palatability
Fish Health: Disease; Methods
Genetics: Selective breeding; Triploidy
Hatchery Management: Marking techniques; Pond culture; Production methods; Rearing facilities; Transportation methods
Nutrition: Diets; Feeding methods; Requirements and additives
Physiology: Biochemistry; Environment
Reproduction: Egg handling and incubation; Spawning
Water: Quality; Treatment

Crustaceans and Molluscs

General
Digestibility estimates, prawns, crayfish 303
Mysidopsis bahia reared on artemia 29
Water recirculation system for crustaceans 119

Drugs and Chemicals

Efficacy
Oxytetracycline, tiger muskellunge feed 312
Palatability
Erythromycin thiocyanate, chinook salmon 241

Fish Health

Disease
Channel catfish virus, response of adults 181
Corneal epithelial abrasion effects 219
Vertical transmission, *Aeromonas salmonicida* 302
Methods
Measuring fin erosion 314
Prerelease formalin treatment, chinook salmon 96
Sulfonamide therapy, channel catfish 188

Genetics

Selective breeding
Improving growth, channel catfish 293
Reproductive isolation, hybrid sunfish 296
Triploidy
Triploid grass carp production 213

Hatchery Management

Marking techniques
Strontium, dietary marker in brook trout 34
Pond culture
Cannibalism by pond-reared walleyes 264
Fertilization rates, sport-fish ponds 100
Inorganic fertilizers, granular and liquid 21
Survival, razorback suckers 138
Zooplankton abundance, mariculture ponds 253
Production methods
Antimycin to kill scaled fish in catfish tanks 131
Bird predation, Florida culture ponds 44
Cannibalism, intensive striped bass culture 270
Cannibalism, pond-reared walleyes 264

Catfish winter feeding rates 290
Communal rearing, mixed tilapia species 17
Controlling steelhead growth 248
Electrical anesthesia for salmonids 144
Measuring fin erosion 314
Measuring fish lengths 310
Rearing density, Atlantic salmon 280
Rearing density, fingerling lake trout 284
Sheepshead culture, preliminary evaluation 224
Snook culture, preliminary evaluation 49
Triploid grass carp production 213
Rearing facilities
Alarm for air pressure system 152
Crowding net and drain, circular tanks 73
Low-cost circular ponds 75
Passive solar system for marine species 146
Pressure-drop detector, recirculation system 239
Prime-retaining siphon 236
Support rack for water chiller 238
Wire mesh, minimum size for channel catfish 72
Transportation methods
Minimizing stress in small containers 154

Nutrition

Diets
Cannibalism, intensive striped bass culture 270
Cannibalism, pond-reared walleyes 264
Dietary protein, feeding rate, rainbow trout 81
Fairy shrimp as larval fish diet 217
Feed consumption monitor 133
Prepared feeds, attractants, largemouth bass 198
Starter diets for cutthroat trout 93
Starter diets for lake trout 299
Feeding methods
Cold-weather feeding, channel catfish 290
Cold-weather feeding, largemouth bass 286
Controlling growth, steelhead 248
Feed conversion indices 161
Feeding intensively cultured bluegill fry 204
Feeding rates, dietary protein, rainbow trout 81
Feeding rates, formulated diets 87
Prey and background color, Atlantic salmon 140
Requirements and additives
Dietary oxytetracycline, tiger muskellunge 312
Diet digestibility, prawns and crayfish 303
Erythromycin palatability, chinook salmon 241
Phosphorus deficiency, rainbow trout 192
Vitamin C, channel catfish 13

Physiology

Biochemistry
Chemical reference ranges, channel catfish 108
Hormone-induced egg maturation, lake trout 276
Stress responses, red drum 1
Environment
Ammonia, nitrite toxicity, spotted seatrout 260
Lowered temperature, lake trout eggs 175
Responses to salinity, mummichog 136
Temperature, eggs and fry of lake trout 115
Temperature extremes, young coho salmon 167
Temperature, growth efficiency, Atlantic salmon 57
Temperature limits, larval walleyes 63

Reproduction

Egg handling and incubation
Preservation of striped bass eggs 230
Streamside incubation box, Atlantic salmon 124
Spawning
Aquarium breeding, roach 237
Egg and fry removal, tilapia spawning 129
Egg stripping after ovulation, coho salmon 177
Hormone-induced egg maturation, lake trout 276
Hormone-induced spawning, orangemouth corvina 66
Hormone-induced spawning, weakfish 158
Induced spawning, maturation, striped bass 60
Laboratory spawning, sheepshead 229
Saline medium for northern pike fertilization 117
Spawning and hatching, Atlantic tomcod 69
Spawning cans in lakes, channel catfish 76
Spawning containers, channel catfish ponds 308
Sperm storage and cryopreservation, walleye 40

Water

Quality
Aerator performance, saline ponds 306
Ammonia, nitrite toxicity, spotted seatrout 260
Treatment
Gas supersaturation treatment equipment 208
Pressure-drop detector, recirculation system 239
Ultraviolet water treatment 233
Water conditioners, recirculation systems 64

THE

Progressive Fish-Culturist

Volume 49, 1987

PUBLISHED QUARTERLY AT LAWRENCE, KANSAS

by the

AMERICAN FISHERIES SOCIETY

AMERICAN FISHERIES SOCIETY

Shelby D. Gerking, *President*

Carl R. Sullivan, *Executive Director* Robert L. Kendall, *Managing Editor*

The American Fisheries Society was organized in 1870. Its objectives are conservation, development, and wise use of recreational and commercial fisheries; promotion of all branches of fisheries science and practice; and exchange and dissemination of knowledge about fish, fisheries, and related subjects.

UNITED STATES DEPARTMENT OF THE INTERIOR

Donald P. Hodel, *Secretary*

William P. Horn, *Assistant Secretary for Fish, Wildlife, and Parks*

Fish and Wildlife Service, Frank Dunkle, *Director*

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environment and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interests of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

THE PROGRESSIVE FISH-CULTURIST

Robert G. Piper, *Editor*

Post Office Box 3706
Bozeman, Montana 59772

EDITORIAL BOARD

Fred W. Allendorf
Richard O. Anderson
James W. Avault, Jr.
Claude E. Boyd
Laurie G. Fowler
Donald L. Garling
Richard W. Gregory
Raymond C. Hubley, Jr.
Sterling K. Johnson
Calvin M. Kaya
J. Howard Kerby
O. Eugene Maughan
David W. McDaniel
Ivan B. McElwain
Hugh A. Poston
H. Randall Robinette
Richard W. Soderberg
Robert R. Stickney
Robert V. Thurston
Gary A. Wedemeyer

The contents of this publication have not been copyrighted and may be reprinted freely, but reference to the source will be appreciated. The publication herein of material selected from sources outside the Fish and Wildlife Service is not to be construed as an endorsement thereof, nor is the Fish and Wildlife Service responsible for the correctness of statements of fact, views, or opinions found in such material. The Fish and Wildlife Service makes neither recommendation nor endorsement of any commercial product, and has made no determination with respect to patent rights involved in the devices mentioned in this publication.

The Progressive Fish-Culturist (ISSN 0033-0779) is published quarterly at the subscription rate of $16.00 per volume ($21 outside the United States) by the American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, Maryland 20814, USA, and the U.S. Fish and Wildlife Service. Second-class postage paid at Bethesda, Maryland, and at additional mailing office. POSTMASTER: send address changes to *The Progressive Fish-Culturist,* American Fisheries Society, 5410 Grosvenor Lane, Suite 110, Bethesda, Maryland 20814, USA. Price per issue: $6. Undelivered copies will be replaced if the Society's Executive Director is notified by North American subscribers within 3 months, and by other subscribers within 8 months, of publication.

THE PROGRESSIVE FISH-CULTURIST

VOLUME 49, NUMBER 1, JANUARY 1987

1 Plasma Cortisol and Secondary Stress Responses of Red Drum to Handling, Transport, Rearing Density, and a Disease Outbreak
L. Robertson, P. Thomas, C. R. Arnold, and J. M. Trant

13 Effects of Dietary Vitamin C on Growth, Caudal Fin Development, and Tolerance of Aquaculture-Related Stressors in Channel Catfish
P. M. Mazik, T. M. Brandt, and J. R. Tomasso

17 Efficacy of Mixed-Species Communal Rearing as a Method for Performance Testing of Tilapias
A. S. McGinty

21 Comparison of Granular and Liquid Inorganic Fertilizers Used in Striped Bass and Smallmouth Bass Rearing Ponds
B. W. Farquhar

29 Feeding Response of the Mysid *Mysidopsis bahia* Reared on Artemia
S. H. Ward

34 Use of Strontium as a Nutritional Marker for Farm-Reared Brook Trout
A. Guillou and J. de la Noüe

40 Short-Term Storage and Cryopreservation of Walleye Semen
A. A. Moore

Communications

44 Potential Problems of Bird Predation for Fish Culture in Florida
H. L. Schramm, Jr., M. W. Collopy, and E. A. Okrah

49 Snook and Tarpon Snook Culture and Preliminary Evaluation for Commercial Farming
J. W. Tucker, Jr.

57 Atlantic Salmon Growth Efficiency as Affected by Temperature
W. P. Dwyer and R. G. Piper

60 Laboratory Maturation and Induced Spawning of Striped Bass
A. Henderson-Arzapalo and R. L. Colura

Errata

63 Revised Estimates of Growth Requirements and Lethal Temperature Limits of Juvenile Walleyes
(K. E. F. Hokanson and W. M. Koenst)

Technical Notes

64 Use of Water Conditioners in Water-Recirculation Systems
D. C. LaBomascus, E. H. Robinson, and T. L. Linton

66 Successful Spawning of Orangemouth Corvina Following Injection with des-Gly^{10}, [D-Ala^{6}]-Luteinizing Hormone-Releasing Hormone (1-9) Ethylamide and Pimozide
J. A. Prentice and P. Thomas

69 Spawning and Hatching Atlantic Tomcod
L. C. Watson

72 Minimum Size of Channel Catfish Retained by 2.5 × 1.3-cm Plastic-Coated Wire Mesh
D. C. Greenland

73 Drain Modifications and a Crowding Net for Circular Tanks
T. M. Brandt and J. C. Morrow

75 Simple Low-Cost Circular Ponds
S. P. Hawke and M. S. Field-Dodgson

76 Suspended Spawning Cans for Channel Catfish in a Surface-Mine Lake
P. B. Moy and R. R. Stickney

78 **Guide for Authors**

VOLUME 49, NUMBER 2, APRIL 1987

81 Performance of Rainbow Trout as Affected by Amount of Dietary Protein and Feeding Rate
G. Reinitz

87 Feeding Levels for Fish Fed Formulated Diets
H. Westers

93 Evaluation of Starter Diets for Snake River Cutthroat Trout
D. A. Edsall

96 Safe Prerelease Disease Treatment with Formalin for Fall Chinook Salmon Smolts
S. D. Smith, R. W. Gould, W. S. Zaugg, L. W. Harrell, and C. V. W. Mahnken

100 Experiments on Fertilization of Sport-Fish Ponds
A. Murad and C. E. Boyd

108 Biochemical Reference Ranges for Commercially Reared Channel Catfish
J. Bentinck-Smith, M. H. Beleau, P. Waterstrat, C. S. Tucker, F. Stiles, P. R. Bowser, and L. A. Brown

Communications

115 Effects of Water Temperature on Survival of Eggs and Fry of Lake Trout
D. E. Ostergaard

117 Use of Saline Solutions to Improve Fertilization of Northern Pike Eggs
J. P. Rieniets and J. L. Millard

119 A Recirculating-Water System for Rearing Aquatic Crustaceans in Individual Cages
J. M. Heiner

124 A Deep-Substrate Streamside Incubation Box for Atlantic Salmon Eggs
R. W. Gray and J. D. Cameron

129 Effects of Frequency of Egg and Fry Removal on Spawning by *Tilapia nilotica* in Hapas
M. C. Verdegem and A. S. McGinty

131 Use of Antimycin A in Live-Haul Tanks to Remove Scaled Fish from Fingerling Channel Catfish Populations
S. W. Lloyd

133 A Fish Feed Consumption Monitor
M. Walsh, J. E. Huguenin, and K. T. Ayers

136 Response of the Brackish-Water Mummichog to Different Salinities
M. Nead and J. K. Buttner

138 Survival of Razorback Suckers Cultured in Earthen Ponds
R. L. Hamman

140 Effects of Prey Color and Background Color on Feeding by Atlantic Salmon Alevins
H. I. Browman and B. M. Marcotte

Technical Notes

144 Modifications in Electrical Anesthesia for Salmonids
J. A. Orsi and J. W. Short

146 Passive Solar System for Maintaining and Rearing Marine Organisms
P. Yuschak and F. M. Richards

152 Hatchery Alarm System for Monitoring Air Pressure
C. T. Jordan and A. J. Sonski

154 A Method to Minimize Stress during Fish Transport
P. Winkler

156 Evaluation of Wire Nose Tags for Marking Largemouth Bass
J. H. Williamson

158 Hormone-Induced Spawning of Weakfish
S. T. Szedlmayer

Errata

160 Effects of Diet on Growth and Survival of Larval Walleyes (K. E. F. Hokanson and G. J. Lien)

VOLUME 49, NUMBER 3, JULY 1987

Commentary

161 Feed Conversion Indices: Controversy or Convention?
N. C. Parker

Articles

167 Effect of Temperature Extremes on the Mortality and Development Rates of Coho Salmon Embryos and Alevins
J. Tang, M. D. Bryant, and E. L. Brannon

175 Effect of Lowering Water Temperature on Hatching Time and Survival of Lake Trout Eggs
W. P. Dwyer

177 Viabilities of Eggs Stripped from Coho Salmon at Various Times after Ovulation
M. S. Fitzpatrick, C. B. Schreck, F. Ratti, and R. Chitwood

181 Response of Adult Channel Catfish to Waterborne Exposures of Channel Catfish Virus
R. P. Hedrick, J. M. Groff, and T. McDowell

188 Potentiated Sulfonamide Therapy of *Aeromonas hydrophila* Infection in Channel Catfish
P. R. Bowser, W. W. Falls, and G. Maestrone

192 Phosphorus Deficiency in Rainbow Trout Fed a Diet Containing Deboned Fillet Scrap
K. D. Shearer and R. W. Hardy

198 Evaluation of Prepared Feeds and Attractants for Largemouth Bass Fry
T. M. Brandt, R. M. Jones, Jr., and R. J. Anderson

204 Feeding Behavior of Intensively Cultured Bluegill Fry
A. Barkoh and T. Modde

Communications

208 Evaluation of Gas Supersaturation Treatment Equipment at Fish Hatcheries in Michigan and Wisconsin
L. L. Marking

213 Triploid Grass Carp Production
B. Z. Thompson, R. J. Wattendorf, R. S. Hestand, and J. L. Underwood

217 Acceptability of Fairy Shrimp (*Streptocephalus seali*) as a Diet for Larval Fish
J. W. Meade and L. Bulkowski-Cummings

219 Effects of Corneal Epithelial Abrasion on Corneal Transparency, Aqueous Humor Composition, and Lens of Fish
J. L. Ubels and H. F. Edelhauser

224 Sheepshead Culture and Preliminary Evaluation for Farming
J. W. Tucker, Jr.

Technical Notes

229 Laboratory Spawning of Sheepshead
J. W. Tucker, Jr. and P. A. Barbera

230 Preservation of Striped Bass Eggs Collected from a Low-Hardness, Freshwater System in South Carolina
D. W. Gates, J. S. Bulak, and J. S. Crane

233 Efficacy of Ultraviolet Water Treatment at the Green Lake, Maine, National Fish Hatchery
V. K. Cross and L. Peterson

236 Prime-Retaining Siphon for Use in Intensive Culture Systems
M. R. Braid

237 Incidental Breeding of Roach (*Rutilus rutilus*) in an Aquarium
S. I. H. Jafri

238 Support Rack for Portable Water Chillers
D. V. Rottiers

239 Inexpensive Pressure-Drop Detector for Water Recirculation Systems
C. A. Martinez-Palacios, A. Flores, and M. A. Olvera

VOLUME 49, NUMBER 4, OCTOBER 1987

241 Palatability of Feed Containing Different Concentrations of Erythromycin Thiocyanate to Chinook Salmon
J. A. Schreck and C. M. Moffitt

248 Methods of Controlling Growth of Steelhead
R. R. Smith

253 Zooplankton Abundance in Unstocked Mariculture Ponds at Three Salinities
R. L. Colura, G. C. Matlock, and A. F. Maciorowski

260 Acute Toxicity of Ammonia and Nitrite to Spotted Seatrout
H. V. Daniels, C. E. Boyd, and R. V. Minton

264 Factors Affecting Cannibalism by Pond-Reared Juvenile Walleyes
D. B. McIntyre, F. J. Ward, and G. M. Swanson

270 Effects of Diet on Growth Depensation and Cannabalism among Intensively Cultured Larval Striped Bass
M. H. Paller and W. M. Lewis

276 Effect of LH-RH Analogue Treatment on Egg Maturation (Ovulation) in Lake Trout Brood Stock
D. Erdahl and J. McClain

280 Effects of Rearing Density on Growth, Survival, and Fin Condition of Atlantic Salmon
R. W. Soderberg and J. W. Meade

Communications

284 Growth and Survival of Fingerling Lake Trout Reared at Four Densities
R. W. Soderberg, D. S. Baxter, and W. F. Krise

286 Feeding Largemouth Bass during Cool and Cold Weather
T. M. Brandt and S. A. Flickinger

290 Winter Feeding of Channel Catfish Based on Maximum Air Temperature
D. L. Tackett, R. R. Carter, and K. O. Allen

293 Comparison of Mass Selection, Crossbreeding, and Hybridization for Improving Growth of Channel Catfish
R. A. Dunham, R. O. Smitherman, and R. K. Goodman

296 Reproductive Isolation between a Hybrid Sunfish and Its Parental Species
M. W. Brunson and H. R. Robinette

299 Performance of Lake Trout Fed Selected Starter Diets
G. A. Kindschi, D. A. Edsall, R. A. Phillips, and S. H. Severson

Technical Notes

302 Studies on Vertical Transmission of *Aeromonas salmonicida*
G. L. Bullock and H. M. Stuckey

303 Estimation of Crude Protein, Energy, and Amino Acid Digestibilities in Freshwater Prawns (*Macrobrachium rosenbergii*) and Crayfish (*Pacifastacus leniusculus*) with a Fecal Collection System
R. W. Ellis, J. Long, L. Leitner, J. Parsons

306 Performance of Surface Aerators in Saline Pond Waters
C. E. Boyd and H. V. Daniels

308 Effects of Spawning Container Type and Placement Depth on Channel Catfish Spawning Success in Ponds
J. A. Steeby

310 Improved Method of Measuring Lengths of Large Samples of Fish
L. Trent, B. J. Palko, A. Trimble

312 Application of Liquid Oxytetracycline in Formulated Feeds to Mark and Treat Tiger Muskellunge (Northern Pike × Muskellunge)
D. H. Wahl and R. A. Stein

314 Method for Quantifying Degree of Fin Erosion
G. A. Kindschi

316 **Referee Acknowledgments**

318 **Index to Volume 49**

i **Table of Contents, Volume 49**